

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT
(PCT Article 36 and Rule 70)

Applicant's or agent's file reference	FOR FURTHER ACTION <small>See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)</small>	
International application No. PCT/GB 03/01614	International filing date (day/month/year) 15.04.2003	Priority date (day/month/year) 15.04.2002
International Patent Classification (IPC) or both national classification and IPC G07D7/12		
Applicant ENSEAL SYSTEMS LIMITED		

1. This International preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.

This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 2 sheets.
3. This report contains indications relating to the following items:
 - I Basis of the opinion
 - II Priority
 - III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - IV Lack of unity of invention
 - V Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - VI Certain documents cited
 - VII Certain defects in the international application
 - VIII Certain observations on the international application

Date of submission of the demand 14.11.2003	Date of completion of this report 18.08.2004
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized Officer Verhoef, P Telephone No. +31 70 340-4235



**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/GB 03/01614**

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-16 as originally filed

Claims, Numbers

1-15 filed with telefax on 30.03.2004

Drawings, Sheets

1/4-4/4 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- the language of publication of the international application (under Rule 48.3(b)).
- the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- contained in the international application in written form.
- filed together with the international application in computer readable form.
- furnished subsequently to this Authority in written form.
- furnished subsequently to this Authority in computer readable form.
- The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- the description, pages:
- the claims, Nos.:
- the drawings, sheets:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

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5. This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-15
	No: Claims	
Inventive step (IS)	Yes: Claims	11 13
	No: Claims	1-10 12 14-15
Industrial applicability (IA)	Yes: Claims	1-15
	No: Claims	

2. Citations and explanations

see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB 03/01614

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

The examination is being carried out on the following application documents:

Text for the Contracting States:

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LT LU LV MC MK NL PL PT RO SE SI SK TR

Description, pages:

1-16 as originally filed

Claims, No.:

1-15 with telefax of 30/03/2004

Drawings, sheets:

1/4-4/4 as originally filed

1. Reference may be made to the following documents:

D1: EP-A-0 165 734 (BANK OF ENGLAND) 27 December 1985 (1985-12-27)
D2: EP-A-0 527 285 (KOENIG & BAUER AG) 17 February 1993 (1993-02-17)

2 The present application does not meet the criteria of Article 33(1) PCT, because the subject matter of claims 1 - 10, 12, 14 and 15 does not involve an inventive step in the sense of Article 33(3) PCT.

2.1 The document D1 is regarded as being the closest prior art to the subject matter of independent claim 1 and discloses (the references in parentheses applying to this document):

A method of detecting unauthorised copies of a genuine document (*cf. page 1, lines 7 - 16; page 2, lines 2 - 10*), comprising the steps of computing a characteristic derivable from a set of documents that are known or can be assumed to be largely genuine (*cf. page 1, lines 16 - 22*); analysing the profiles to assess the probability that any given document within the set, or additional to it, is in fact genuine (*cf. page 21, lines 30 - 36; page 22, lines 6 - 10; page 23, lines 14 - 22*).

**INTERNATIONAL PRELIMINARY
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International application No. PCT/GB 03/01614

Document D1 does neither directly nor indirectly reveal the following feature:

- the characteristic being associated with the output of a printer that prints genuine documents and not being intrinsic to the original document

The problem solved by this feature is the determination of the origin of any document.

The concept of determining the origin of a document based upon the characteristics being associated with the output of a printer is known from detective novels, e.g. Agatha Christie.

If the person skilled in the art would like to know the origin of a document, he would use the teaching of document D1, where genuineness of documents are determined by comparing them on a pixel against pixel basis with a 'master document'. The master document would be based, using the teaching of well-known detective novels, upon a set of documents printed on the genuine printer, and therefore having the characteristics being associated with the output of a printer that prints genuine documents.

The subject matter of independent claim 1 is therefore not inventive as is required by Article 33(3) PCT.

2.2 The dependent claims 2 - 10, 12, 14 and 15 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step.

The subject matter of the dependent claims 2 - 10, 12, 14 and 15 is therefore not inventive as is required by the Article 33(3) PCT.

3. The combination of the dependent claims 11 and 13 with the features of the claims they refer to, is neither known from, nor rendered obvious by, the available prior art.

CLAIMS

5 1. A method of detecting unauthorised copies of a genuine document, comprising the
steps of:

(a) computing profiles of a printing characteristic derivable from a set of
documents that are known or can be assumed to be largely genuine, the
characteristic being associated with the output of a printer that prints genuine
10 documents and not being intrinsic to the original document;

(b) analysing the profiles to assess the probability that any given document
within the set, or additional to it, is in fact genuine.

2. The method of Claim 1 in which the characteristic is the degree of print diffusion on
15 line edges.

3. The method of Claim 1 in which the characteristic is the degree of line
fragmentation.

20 4. The method of Claim 1 in which the characteristic is the degree of edge deformation.

5. The method of Claim 1 in which the characteristic is the configuration of pixels.

6. The method of Claim 1 in which the characteristic is the orientation of glyphs.

25 7. The method of Claim 1 in which the profile is represented in a histogram.

8. The method of Claim 7 in which the profile is represented as a first derivative of the
histogram.

30 9. The method of Claim 1 in which profile related data is written into the document.

10. The method of Claim 1 in which the profile is generated and updated as a consequence of large numbers of printed documents being regularly analysed.
11. The method of Claim 10 in which the document is a cheque.
5
12. The method of Claim 1 in which the original is accurately printed in a controlled environment and the profile is generated using occasional samples.
13. The method of Claim 12 in which the document is currency, a driving license, ID, or
10 a passport.
14. The method of Claim 1 in which the original is modified by including a special printed feature designed to facilitate profile comparison.
15. 15. The method of any preceding Claim comprising the steps of generating a mean value for several profiles and determining the distance from this mean of each of a large number of sample documents, so that any counterfeit documents in the sample fall outside of the distance distribution associated with authentic documents.